

## CLAIMS

1. An amplifying circuit comprising:

an amplifier amplifying a signal received through an input terminal, and  
5 outputting the signal through an output terminal; and  
a control circuit turning at least one of an input impedance and an output  
impedance of said amplifier into a high impedance.

2. The amplifying circuit as set forth in claim 1, wherein said control circuit  
10 is comprised of an inductor and a switch.

3. The amplifying circuit as set forth in claim 2, wherein said inductor and  
said switch are electrically connected in series to each other, and further  
electrically connected in an AC manner between said input or output terminal  
15 and a grounded voltage.

4. The amplifying circuit as set forth in claim 3, wherein said switch is  
comprised of a field effect transistor.

20 5. The amplifying circuit as set forth in claim 3, wherein said inductor has  
an inductance resonating in parallel with a parasitic capacity of said amplifier.

6. The amplifying circuit as set forth in claim 1, wherein said control circuit  
is comprised of:

25 at least two transmission lines including at least a first transmission line  
electrically connected at one end thereof to said input or output terminal, and a  
second transmission line grounded at one end thereof, a total length of said at  
least two transmission lines being equal to  $K \times S$  wherein K indicates an odd  
number, and S indicates a quarter of a wavelength of said signal; and

a switch for selecting whether said input or output terminal is electrically connected to a grounded voltage through a transmission line having a length of  $K \times S$  or through a transmission line having a length shorter than  $K \times S$ .

5        7. The amplifying circuit as set forth in claim 6, wherein said transmission line having a length shorter than  $K \times S$  acts as an inductor having an inductance resonating in parallel with a parasitic capacity of said amplifier.

10       8. The amplifying circuit as set forth in claim 1, wherein said amplifier is comprised of two field effect transistors electrically connected in cascode to each other.

15       9. The amplifying circuit as set forth in claim 1, further comprising a field effect transistor electrically connected in series between said amplifier and a power source, said field effect transistor interrupting a current from flowing to said amplifying circuit from said power source when said amplifying circuit is off.

20       10. The amplifying circuit as set forth in claim 1, wherein said amplifying circuit is comprised of a differential amplifying circuit, and further comprising a field effect transistor as a constant-current source between said amplifier and a grounded voltage.

25       11. A gain-variable amplifying circuit comprising at least two amplifying circuits electrically connected in parallel to each other and having gains different from one another,

      said amplifying circuits each comprised of the amplifying circuit as defined in any one of claims 1 to 10,

      wherein a gain is controlled by turning at least one of said input and output impedances of an amplifying circuit(s) other than a selected amplifying circuit,

into a high impedance.